

# **ASNE**

## ***Combat Systems Symposium***

### ***Balancing Capability and Capacity***



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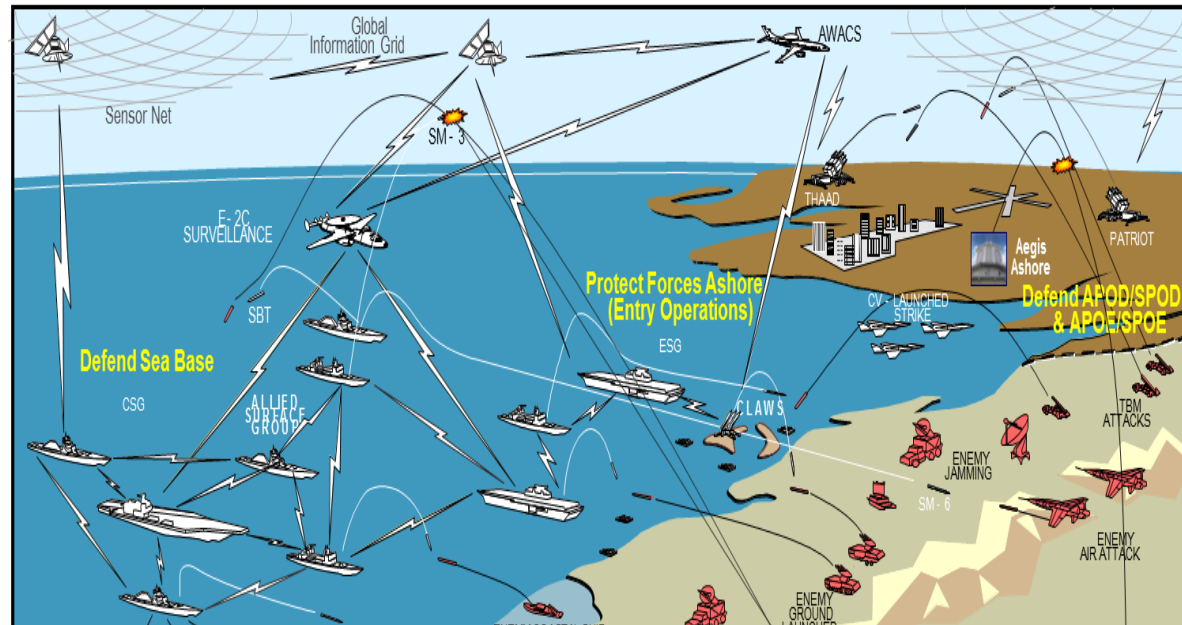


# Balancing Capability and Capacity

## ◆ Capability

### – Meeting COCOM Mission Requirements

- IAMD
  - » Self-Defense
  - » AAW
  - » BMD
- Surface
- Undersea
- Strike
- Cyber Warfare



## ◆ Capacity

### – Force Size, Composition and Availability

- System Wholeness
  - » Interoperability
  - » Maintainability
  - » Training, ...
- Affordability





# Rapidly Evolving Requirements Drive Navy Capability Advancements

## Operational Environment

Humanitarian  
Assistance

Persistent  
ISR

Complex Threats  
Employing Advanced Technology

Anti-Piracy

Disaster  
Relief

Torpedoes

Anti-Ship  
Ballistic Missiles

Advanced  
Super-Sonic  
Anti-Air  
& Anti-Ship Missiles

Mines

**Capability Advancements**

Integrated AAW  
& Situational  
Awareness

Area Air Defense  
In Clutter Environments

High Data Rate  
Battle Group Networks

Over Land  
Defense  
Improved  
Self-Defense

Integrated Air  
and Missile Defense

Space Based BMD  
Tracking

Enhanced  
Shipboard Sensors  
(Radar + ES/EA)

Multi-Ship  
Resource  
Coordination

Cyber  
Defense

UAV  
Integration

Directed  
Energy

Rail Guns

**Navy Missions Have Expanded → New Capability Requirements**



# Capability Trends

## Current Systems

Individual On-board  
Mission Systems  
(AAW, BMD, USW, etc.)

Ships with AAW focus  
Or BMD focus

Rotating Radars  
On Carriers

Improved SPY-1 variants  
on CGs and DDGs

Independent Hard Kill  
and Soft Kill Systems

CM/Decoys for  
Soft Kill

Manually Operated  
Small Guns

Extended Battlespace  
Through EOR using  
SPY-equipped Ships



## Future Systems

Increased Integration  
of On-board  
Mission Systems

Integrated AAW  
and BMD

Phased Arrays on  
Carriers

Advanced Phased  
Array Technology

Integrated Hard Kill  
& Soft Kill

Improved Electronic  
Attack for Soft Kill

Automated Gun Systems  
for Small Boat Raids

More Flexible  
EOR Expanding To Other  
Navy/Force Sensors



SPY-1  
MMSP  
Upgrade

MH-60R Integration



Volume  
Search  
Radar



AMDR-S



SEWIP



MK38 Gun System



AEGIS  
Ashore

NIFC-CA  
SBT  
SM-3 BLK IIA







# Combat System Capability Roadmap

**Improved  
Mission  
Capability**

**Enabling  
Developments**

**Force  
Integration**

**Advanced  
Technologies**





# ***Challenges of Balancing Capability and Capacity***

- ◆ **The Surface Navy is vital to global presence**
- ◆ **The challenge is doing more under fiscal constraints**
- ◆ **Discipline in management and engineering is an imperative for effectively Upgrading and Sustaining The Fleet**